



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,092	11/04/2003	Prasad P. Padiyar	H1310	4407
29393	7590	11/14/2007	EXAMINER	
ESCHWEILER & ASSOCIATES, LLC			ADHAM, MOHAMMAD SAJID	
NATIONAL CITY BANK BUILDING				
629 EUCLID AVE., SUITE 1000			ART UNIT	PAPER NUMBER
CLEVELAND, OH 44114			2616	
			NOTIFICATION DATE	DELIVERY MODE
			11/14/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing@eschweilerlaw.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/701,092	PADIYAR ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Mohammad S. Adhami	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 12 July 2004.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 November 2003 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>11/4/2003</u>	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3,5,9,15,16,18-20, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 15, the limitation beginning with *setting an IPG* is confusing and unclear as written.

Claims 16 and 18-20 are rejected because they depend from a rejected claim.

3. The term "about" in claims 3,5, and 22 is a relative term which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In claim 3, the term "about" renders the steady state time period indefinite.

In claim 5, the term "about" renders the range of IPG values indefinite.

In claim 9, the term "about" renders the transmission and reception rate indefinite.

In claim 22, the term "about" renders the stable state period indefinite.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-6,8-11, and 13-22 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Ramakrishnan (US 5,418,784).

**Re claim 1:**

Ramakrishnan discloses a *collision counter that tracks collisions* (Col.8 line 39 a collision counter).

Ramakrishnan further discloses a *programmable inter packet gap* (Col.4 lines 3-5 “increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached”).

Ramakrishnan further discloses *dynamically generating an IPG value as a function of the collision count* (Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced).

Ramakrishnan further discloses *programming the inter packet gap with the dynamically generated IPG value* (Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed”).

**Re claims 2 and 3:**

Ramakrishnan discloses *generating the IPG value after a steady state time period of about 1 second* (Col.5 lines 24-33 the time for the node to learn of

the collision is the round-trip propagation delay, a maximum of 51.2 microseconds (which is about 1 second), where the IPG value is adjusted after learning of a collision, so the value is steady for the time period it takes to learn of the collision).

**Re claims 4 and 5:**

Ramakrishnan discloses *generating the IPG values by testing a plurality of IPG value and evaluating a number of collisions for each of the IPG values, where the IPG values range from about 96 bit times to about 272 bit times* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where N is the number of collisions).

**Re claim 6:**

Ramakrishnan discloses *storing the collision counts associated with the IPG value* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where the collision count is inherently stored and it is associated with an IPG value based on the formula  $9.6+10(N+1)$  where N is the number of collisions experienced).

**Re claim 8:**

Ramakrishnan discloses *generating the IPG value as a function of an IPG range, a step value, a convergence time, and a stable state time* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of

collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is  $10(N+1)$ , the convergence time is the time after a collision, the stable state time is a time slot interval).

**Re claim 9:**

Ramakrishnan further discloses *transmitting and receiving at about 100 Mbps in half duplex* (Col.1 lines 21-23 the present invention may also be applicable to a 100 Mbps channel and Abstract "IEEE 802.3" where IEEE 802.3 defines a half duplex mode).

**Re claim 10:**

Ramakrishnan discloses *a plurality of network stations* (Col.1 lines 9-10 and 28 local area networks (LANs) of the Ethernet type, where a LAN has a plurality of nodes).

Ramakrishnan further discloses *a station dynamically generating IPG values according to tracked collision counts and programmable parameters* (Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced).

Ramakrishnan further discloses *a network medium connecting the stations* (Col.1 lines 24-25 access to a network bus or cable, where the bus or cable connects nodes).

**Re claim 11:**

Ramakrishnan discloses *parameters including an IPG range and a step value* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is  $10(N+1)$ ).

**Re claim 13:**

Ramakrishnan discloses *setting one or more programmable parameters, which include a range of IPG values* (Col.4 lines 3-5 “increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached).

Ramakrishnan further discloses *dynamically determining an IPG value from the range of IPG values according to tracked collisions* (Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced).

Ramakrishnan further discloses *programming the network device with the determined IPG value* (Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed”).

**Re claim 14:**

Ramakrishnan discloses *testing one or more IPG values of the range of IPG values* (Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced where the IPG value is “tested” and if collision occurs, another IPG value is used).

Ramakrishnan further discloses *obtaining respective collision counts for the tested IPG values* (Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced).

Ramakrishnan further discloses *selecting an IP value that yields a lowest collision count* (Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed” and Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced where the IPG value with the lowest collision count is used).

**Re claims 15,16, and 18:**

Ramakrishnan discloses *programming an IPG current value to a network device* (Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed”).

Ramakrishnan further discloses *obtaining a current collision count over a selected time period* (Col.3 lines 66-68 to Col.4 line 1 selecting a progressively larger interval after every collision experienced).

Ramakrishnan further discloses *setting an IPG modified value to the current IPG value with the current collision count* (Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced where the IPG value selected is the one with the lowest current collision count).

Ramakrishnan further discloses *incrementing the IPG current value by a step value* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value

based on the number of collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where the step value is  $10(N+1)$ .

**Re claim 17:**

Ramakrishnan discloses *the programmable parameters including a step value, a convergence time, and a stable state time* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is  $10(N+1)$ , the convergence time is the time after a collision, the stable state time is a time slot interval).

**Re claims 19 and 20:**

Ramakrishnan discloses *the IPG current value initially being 96 bit times and the step value being 1 bit time* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where  $N$  is the number of collisions).

**Re claims 21 and 22:**

Ramakrishnan discloses *a stable state time of about 60 seconds* (Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by  $9.6+10(N+1)$ . The value is limited to a maximum of 51.2 microseconds where the stable state time is a time slot interval, which is “about” 60 seconds).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan.

**Re claim 7:**

As discussed above, Ramakrishnan meets all the limitations of the parent claims.

Ramakrishnan does not explicitly disclose *the IPG determiner and storage unit being part of a device driver.*

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the IPG determining and storage unit as part of a device driver in order to maintain control of a device accessing a network.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan in view of Fellman (US 6,751,231).

**Re claim 12:**

As discussed above, Ramakrishnan meets all the limitations of the parent claim.

Ramakrishnan further discloses *tracking the number of collisions* (Col.8 line 39 a collision counter).

Ramakrishnan does not explicitly disclose *tracking throughput and modifying the IPG value to achieve a desired throughput*.

Fellman discloses *tracking throughput and modifying the IPG value to achieve a desired throughput* (Abstract the device adapters may support latency and throughput guarantees for real-time traffic by modifying the back-off protocol).

Ramakrishnan and Fellman are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ramakrishnan to include modifying the IPG value to achieve a desired throughput as taught by Fellman in order to meet quality of service guarantees.

### ***Conclusion***

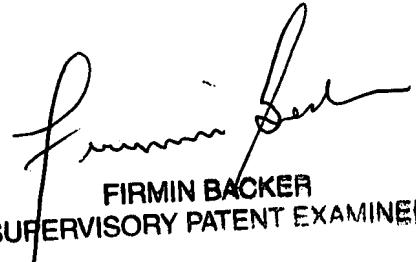
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kalkunte (US 6,078,591), Min (US 6,819,676), and Shaffer (US 6,172,983) show selecting an IPG or back-off time based on the number of collisions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad S. Adhami whose telephone number is (571)272-8615. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571)272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MSA 11/5/2007



FIRMIN BACKER  
SUPERVISORY PATENT EXAMINER